DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. **Claims 1-5 and 8-20** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Applicant's Admitted Prior Art, hereafter "BAKX" et al. (US 5,303,217)** in view of **Yamamoto (US 6,198,707).**

Regarding claim 1,

Bakx teaches a device for recording information in a track on a record carrier **("6" in figure 1)**, the device comprising:

a head (**"50" in figure 5**) for generating a beam of radiation for writing marks and spaces between the marks, and for generating at least one read signal in dependence on the marks and spaces, the marks and spaces each having a nominal run length of a predetermined number of bits, and the run lengths constituting a recorded pattern having a multitude of different run lengths for representing the information **(column 4:37-46)**,

detection means **("64" in figure 5)** coupled to the read signal for generating a signed deviation value signal **(column 7:38-48)**,

calculation means **("65" in figure 5)** for selecting at least one predefined run length pattern **(see discussion of recorded information pattern in column 7:31-40)** and determining a correction signal based on at least one statistically calculated parameter of the signed deviation value signal for the selected run length pattern **(column 7:48-52),** and

radiation source control means **("66" in figure 5)** for controlling the power of the radiation source during said writing in dependence of the correction signal **(column 7:62-68)**.

BAKX fails to teach that the starting edge of the mark and/or ending edge of the mark of the predefined run length pattern is used in generating the correction signal.

YAMAMOTO teaches determining the start position of an information pattern by referring to the starting edge of the mark and/or ending edge of the mark in a previously recorded information pattern and determining the PPL signal of said previously recorded information pattern.

It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the teachings of Bakx and Yamamoto, further tuning the accuracy of the start position of an information pattern wherein the d.c. level and channel bit PLL are used for minimizing deviation of the start position of a recording pattern for the

purpose of reducing jitter and avoiding data loss in instances of multiple data write sessions.

Regarding claim 2,

BAKX teaches a device as claimed in claim 1, wherein the calculation means **("65" in figure 5)** are arranged for calculating a mean value of the run length between the starting edge and the ending edge of marks as the parameter of the signed deviation value signal **(see discussion of write pattern length as parameter in column 6:23-46)**.

Regarding claim 3,

BAKX teaches a device as claimed in claim 1, wherein the calculation means **("65" in figure 5)** are arranged for calculating a mean value of the position deviation of the starting edge and/or the ending edge as the parameter of the signed deviation value signal **(column 6:2-5).**

Regarding claim 4,

BAKX teaches a device as claimed in claim 1, wherein the calculation means are arranged for selecting as the run length pattern marks and/or spaces nominally having a single predefined run length, or run lengths in a limited range of run lengths, or a run length sequence including at least a mark and at least one space having predefined run lengths **(column 6:23-46).**

Regarding claim 5,

Yamamoto teaches a device as claimed in claim 4, wherein the calculation means are arranged for calculating a mean value of said parameter in dependence of the size of a space preceding the starting edge or following the ending edge of the mark **(column 6:29-54).**

Regarding claim 8,

BAKX teaches a device as claimed in claim 1, wherein the detection means **("64" in figure 5)** are arranged for generating the signed deviation value signal during an optimum power control mode (OPC), in which mode test information is written and the radiation source control means are controlling the power of the radiation source during said writing at an optimum power according to predefined settings and/or previously generated values of the correction signal **(column 5, lines 2-20 teach the device for use in determining optimum write intensity, also see column 5:42-44).**

Regarding claim 9,

The combined disclosures of Bakx and Yamamoto teaches a device as claimed in claim 1, wherein the detection means **("64" in figure 5)** are arranged for generating the signed deviation value signal during said writing **(column 7:38-48)**, during which writing the radiation source control means are controlling the power of the radiation source at an optimum power according to predefined settings **(column 5, lines 2-20 and lines 42-44)** and/or previously generated values of the correction signal, by

temporarily interrupting said writing and during said interruption reading a part of the recorded pattern for generating the read signal **(Yamamoto teaches the correction unit of Figure 7 for use after generation of a pause signal in column 5:20-30).**

Regarding claim 10,

BAKX teaches a method of controlling the power of a radiation source during recording information in a track on a record carrier **("6" in figure 1)**, the method comprising:

writing and reading **(via "50" in figure 5**) marks and spaces between the marks, the marks and spaces each having a nominal run length of a predetermined number of bits, and the run lengths constituting a recorded pattern having a multitude of different run lengths for representing the information **(column 4:37-46)**

generating a signed deviation value signal **(column 7:38-48)** indicative of a position deviation of a starting edge of a mark and/or an ending edge of a mark with respect to a nominal position of said edge, selecting at least one predefined run length pattern,

and determining a correction signal **("65" in figure 5).**

BAKX fails to teach that the starting edge of the mark and/or ending edge of the mark of the predefined run length pattern is used in generating the correction signal.

YAMAMOTO teaches determining the start position of an information pattern by

referring to the starting edge of the mark and/or ending edge of the mark in a previously recorded information pattern and determining the PPL signal of said previously recorded information pattern.

It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the teachings of Bakx and Yamamoto, further tuning the accuracy of the start position of an information pattern wherein the d.c. level and channel bit PLL are used for minimizing deviation of the start position of a recording pattern for the purpose of reducing jitter and avoiding data loss in instances of multiple data write sessions.

Regarding claim 11,

BAKX teaches a record carrier **("4" in figure 1)**, of a recordable type comprising a track for recording information, the recording comprising:

writing and reading **(via "50" in figure 5**) marks and spaces between the marks, the marks and spaces each having a nominal run length of a predetermined number of bits, and the run lengths constituting a recorded pattern having a multitude of different run lengths for representing the information **(column 4:37-46)** and

an optimum power control process including generating a signed deviation value **(column 5, lines 2-20 and lines 42-44)**;

selecting at least one predefined run length pattern **(see column 7, lines 31-40)**

and determining a correction signal **(column 7:48-52).**

BAKX fails to teach that the starting edge of the mark and/or ending edge of the mark of the predefined run length pattern is used in generating the correction signal.

YAMAMOTO teaches determining the start position of an information pattern by referring to the starting edge of the mark and/or ending edge of the mark in a previously recorded information pattern and determining the PPL signal of said previously recorded information pattern.

It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the teachings of Bakx and Yamamoto, further tuning the accuracy of the start position of an information pattern wherein the d.c. level and channel bit PLL are used for minimizing deviation of the start position of a recording pattern for the purpose of reducing jitter and avoiding data loss in instances of multiple data write sessions.

Regarding claim 12,

BAKX teaches a device as claimed in claim 1, wherein the calculation means **("65" in figure 5)** are arranged for calculating a mean value of the run length between the starting edge and the ending edge of marks as the parameter of the signed deviation value signal **(see discussion of write pattern length as parameter in column 6:23-46)**.

Regarding claim 13,

BAKX teaches a device as claimed in claim 1, wherein the calculation means **("65" in figure 5)** are arranged for calculating a mean value of the position deviation of the starting edge and/or the ending edge as the parameter of the signed deviation value signal **(column 6:2-5).**

Regarding claim 14,

BAKX teaches a device as claimed in claim 1, wherein the nominal position of said edge is at half an interval between two adjacent samples having different signs **(column 5:25-39).**

Regarding claim 15,

BAKX teaches a device as claimed in claim 10, wherein the calculation means **("65" in figure 5)** are arranged for calculating a mean value of the run length between the starting edge and the ending edge of marks as the parameter of the signed deviation value signal **(see discussion of write pattern length as parameter in column 6:23-46)**.

Regarding claim 16,

BAKX teaches a device as claimed in claim 10, wherein the calculation means **("65" in figure 5)** are arranged for calculating a mean value of the position deviation of the starting edge and/or the ending edge as the parameter of the signed deviation value

signal **(column 6:2-5).**

Regarding claim 17,

BAKX teaches a device as claimed in claim 10, wherein the nominal position of said edge is at half an interval between two adjacent samples having different signs **(column 5:25-39).**

Regarding claim 18,

BAKX teaches a device as claimed in claim 11, wherein the calculation means **("65" in figure 5)** are arranged for calculating a mean value of the run length between the starting edge and the ending edge of marks as the parameter of the signed deviation value signal **(see discussion of write pattern length as parameter in column 6:23-46)**.

Regarding claim 19,

BAKX teaches a device as claimed in claim 11, wherein the calculation means **("65" in figure 5)** are arranged for calculating a mean value of the position deviation of the starting edge and/or the ending edge as the parameter of the signed deviation value signal **(column 6:2-5).**

Regarding claim 20,

BAKX teaches a device as claimed in claim 11, wherein the nominal position of said edge is at half an interval between two adjacent samples having different signs

(column 5:25-39).

2. **Claims 6 and 7** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Applicant's Admitted Prior Art, hereafter "BAKX" et al. (US 5,303,217)** in view of **Yamamoto (US 6,198,707)** as applied to claim 5, and further in view of **Hurst, Jr. (US 5,561,656).**

Regarding claims 6 and 7,

The combined disclosures of Bakx and Yamamoto do not teach calculating a pre-heat effect of a mark and controlling the power of the radiation source in dependence of the space preceding the starting edge of the mark, as claimed.

HURST teaches a method of recording information , wherein in the instance of a space region of shorter length, the preheat pulse may be omitted, and in the instance of a space region of longer length, the preheating pulse is applied **(column 2, lines 47-54).**

It would have been obvious for one of ordinary skill in the art at the time of the invention to further alter the combined teachings of Bakx and Yamamoto per the teachings of HURST, employing a preheating pulse in instances where the space region is longer than a first length, for the purpose of avoiding excessive cooling of the data layer of the optical disk, and reliably writing marks on the disk **(column 2, lines 2-6 and lines 21-25**).

Response to Arguments

3. Applicant's arguments with respect to claims rejected in the official action mailed 4/1/2008, have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DIONNE H. PENDLETON whose telephone number is (571)272-7497. The examiner can normally be reached on 10:30-7:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on 571-272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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